again with reference to FIGS. 2 and 3, the ballast tanks 204, 208 comprise starboard and port enclosed ballast tanks wherein each of the starboard and port enclosed ballast tanks comprises a generally L-shaped tank having a first elongated leg 224 fitted beneath quarter gunwales 26 of the vessel 16 and a second leg 228 fitted along an inboard side of the transom 230.

As illustrated with reference again to FIG. 3, intermediate of the stern 20 and bow 18 is the operator's seat 45 within which the operator sits to control steering while viewing instruments. The air control valve 218 is within easy reach of the operator.

As illustrated again with reference to FIG. 14, the inlet line 221 leads to a water scoop 220 which collects the ballast water 208 as the vessel 16 is moved forward through the body of water 30. The water 208 collected in the scoop 220 is fed through the intake line 221 upon proper positioning of the valves 218, 223. If the shut off valve 223 is closed, no water 208 will be allowed to be fed into ballast tanks 202, 204. In addition, water 208, if already in ballast tanks 202, 204 will not be allowed to leave the tanks. However, if the water 208 is to be introduced into ballast tanks 202, 204, the shut off valve 223 must be opened and in addition, the respective air line control valve 218, independently controlling each of the air lines 214, 216 must be opened to allow air to escape from the ballast tanks as the water is being scooped up and fed into the tanks. Thus, if the air line control valve 218 is open, water 208 will be forced into ballast tanks 202, 204 as the boat is moving forward until the ballast tanks are full or the valves are closed. Excess water is forced through the air lines 214, 216 past the air line control valve 218 as one indication that the tanks are full. Alternatively, water level indicators 232 are used. Additionally, tank overflow tubes 234 fitted with one way check valves 236 deliver excess water overboard, as illustrated again with reference to FIG. 14. The overflow tubes 234 limit the maximum pressure in the tanks to a maximum static head. The check valves 236 stop air from flowing back in the tanks when the air control valve 218 is closed.

To remove the water 208 from the tanks 202, 204, the vessel comes to a stand still in a preferred method of dumping the ballast water. The shutoff valve 223 is then opened, with the opening of the air control valve 218 for allowing air into the air lines 214, 216. Through the forces of gravity, the water 208 flows out of the tanks 202, 204 through the intake line 221 and out through the opened shutoff valve 223 to the surrounding body of water 30.

Since the operator sitting in seat 45 has easy access to both valves 218, 223, the amount and shape of the wake 32, illustrated with reference again to FIG. 1, produced by the vessel 16 can be precisely controlled by the operator. By selectively shifting the ballast water 208 into and out of the tanks 202, 204, the wake 32 is produced to a controlled degree for optimum and desirable wakeboarding.

Accordingly, many modifications and other embodiments of the invention will come to the mind of one skilled in the art having the benefit of the teachings presented in the foregoing descriptions and the associated drawings. Therefore, it is to be understood that the invention is not to be limited to the specific embodiments disclosed, and that modifications and embodiments are intended to be included within the scope of the appended claims.

That which is claimed is:

1. A method for improving aerial characteristics of a performance by a performer using a water sport implement and being towed behind a vessel while maintaining the stability of the vessel, the method comprising the steps of:

providing a vessel behind which the performer is to be towed, the vessel including a bow, a foredeck aft of the bow, a stern, opposing sides extending from the bow to the stern, and an operator station positioned amidships between the sides;

fitting a first relatively rigid vertical support structure to a first one of the sides and fitting a second relatively rigid vertical support structure to a second one of the sides, and then extending a generally horizontal bridging portion between upper extremities of the first and second vertically extending support structures, amidships and at a height substantially above the operator station;

pivotally attaching the first and second vertically extending support structures to the respective sides of the vessel and positioning the first and second vertically extending support structures for rotating to a generally horizontal position;

attaching a tow rope to the horizontally extending bridging portion; and

operating the vessel in a body of water while towing the performer from the horizontally extending bridging portion.

2. The method according to claim 1, wherein the fitting step comprises the steps of:

providing each of the first and second vertical support structures with a forward vertical support element and an aft vertical support element; and

fixedly attaching a longitudinally extending bar between each of the forward and aft vertical support elements for forming a skeletal frame.

3. The method according to claim 2, wherein the longitudinally extending bar attaching step comprises the step of attaching the bar generally parallel to the floor of the vessel.

4. The method according to claim 2, further comprising the step of rearwardly angling each of the forward vertical support elements.

5. The method according to claim 1, wherein the first and second one of the sides correspond to starboard and port deck portions, respectively.

6. The method according to claim 1, wherein the first and second one of the sides correspond to starboard and port floor portions, respectively.

7. The method according to claim 1, wherein the height above the level of the operator station is at least six feet above the vessel floor.

8. The method according to claim 1, wherein the bridging portion comprises a tow rope connecting element for attaching the tow rope thereto, and wherein the attaching step comprises the step of attaching the tow rope to the tow rope connecting element.

9. The method according to claim 1, wherein the fitting step includes the step of providing forward and aft U-shaped support structures and forming a skeletal frame from a combination of the first and second vertical support structures and the horizontal bridging portion.

10. The method according to claim 1, wherein the support structures and bridging portion are formed from aluminum.

11. The method according to claim 1, further comprising the step of attaching a plurality of anchoring plates to the vessel, and wherein the fitting step includes the step of fitting each of lower extremities of the vertical support structures to one of the plurality of anchoring plates.

12. A method for towing a performer using a water sport implement and being towed behind a vessel while maintaining the stability of the vessel, the method comprising the steps of:

providing a vessel behind which the performer is to be towed, the vessel including a bow, a foredeck aft of the bow, a stern, opposing sides extending from the bow to the stern, and an operator station positioned amidships;

fitting a first relatively rigid U-shaped support structure across the beam of the vessel, amidships, and extending substantially above the level of the operator station;

rearwardly angling the first U-shaped structure;

fitting a second relatively rigid U-shaped support structure to the sides and across the beam of the vessel, amidships, and extending substantially above the level of the operator station, the first U-shaped support structure forward of the second U-shaped structure with the operator station located in an area between fittings of the first and second U-shaped structures at the respective sides;

attaching a plurality of longitudinally extending bars between the U-shaped support structures so that the first and second support structures form a skeletal frame extending above the operator station;

attaching a tow rope to an upper portion of the skeletal frame; and

operating the vessel in a body of water while towing the performer.

13. The method according to claim 12, further comprising the step of pivotally attaching at least one of the U-shaped structures to the respective sides of the vessel, so as to permit the skeletal frame to be rotated downwardly onto a deck portion of the vessel.

14. The method according to claim 13, further comprising the step of downwardly rotating the skeletal frame onto the foredeck of the vessel.

15. The method according to claim 12, wherein the longitudinally extending bar attaching step comprises the step of attaching the bar generally parallel to the floor of the vessel.

16. The method according to claim 12, further comprising the step of attaching the U-shaped structures to starboard and port deck portions, respectively.

17. The method according to claim 12, further comprising the step of attaching the U-shaped structures to starboard and port floor portions, respectively.

18. The method according to claim 12, wherein the skeletal frame extends to a height above the level of the operator station that is at least six feet above the vessel floor.

19. The method according to claim 12, further comprising the step of attaching a tow rope connecting element to the upper portion of the skeletal frame for attaching the tow rope thereto, and wherein the attaching step comprises the step of attaching the tow rope to the tow rope connecting element.

20. The method according to claim 12, wherein the tower is formed from aluminum.

21. The method according to claim 12, further comprising the step of attaching a plurality of anchoring plates to the vessel, and wherein the fitting step includes the step of fitting each of lower extremities of the U-shaped support structures to one of the plurality of anchoring plates.

22. A towing apparatus for improving aerial characteristics of a performance by a performer using a water sport implement, the towing apparatus comprising:

a vessel behind which the performer is to be towed, the vessel including a bow, a stern and an operator station positioned amidships between opposing sides;

a first relatively rigid vertical support structure fitted between the sides of the vessel at a point forward of the operator station;

a second relatively rigid vertical support structure fitted between the sides of the vessel aft of the first relatively rigid vertical support structure;

a generally horizontal bridging portion extending between upper portions of the first and second vertically extending support structures, at a height substantially above the level of the operator station; and

a tow rope attached to the horizontally extending bridging portion for towing the performer from the horizontally extending bridging portion while operating the vessel in a body of water.

23. The apparatus according to claim 22, further comprising attaching means for attaching the first and second generally vertically extending support structures to the respective sides of the vessel, the attaching means operable so as to permit the first and second support structures to be rotated downwardly so that the vessel may pass underneath a bridge or into a boat house.

24. The apparatus according to claim 22, wherein each of the first and second vertical support structures comprise a forward vertical support element and an aft vertical support element, and wherein the apparatus further comprises a plurality of longitudinally extending bars fixedly attached between each of the forward and aft vertical support elements thus forming a skeletal frame.

25. The apparatus according to claim 24, wherein the plurality of longitudinally extending bars are generally parallel to the floor of the vessel.

26. The apparatus according to claim 24, wherein the forward vertical support element is rearwardly angled for having its lower extremity forward of its upper extremity.

27. The apparatus according to claim 22, wherein the first and second one of the sides correspond to starboard and port deck portions, respectively.

28. The apparatus according to claim 22, wherein the first and second one of the sides correspond to starboard and port floor portions, respectively.

29. The apparatus according to claim 22, wherein the height above the level of the operator station is at least six feet above the vessel floor.

30. The apparatus according to claim 22, further comprising a tow rope connecting element attached to the bridging portion for attaching the tow rope thereto.

31. The apparatus according to claim 22, wherein the skeletal frame is formed from aluminum.

32. The apparatus according to claim 22, further comprising a plurality of anchoring plates attached to the vessel, and wherein each of the lower extremities of the vertical supports are fitted to one of the plurality of anchoring plates.

33. A towing apparatus for a performer using a water sport implement and being towed behind a vessel while maintaining the stability of the vessel, the vessel having a bow, a stern, opposing sides extending from the bow to the stern, and an operator station located amidships between the opposing sides, the towing apparatus comprising:

a first relatively rigid U-shaped support structure for fitting to the sides across the beam of the vessel at a point forward of the operator station and positioned amidships substantially above the level of the operator station;

a second relatively rigid U-shaped support structure for fitting to the sides across the beam of the vessel and positioned amidships substantially above the level of the operator station;

a plurality of bars extending between the U-shaped support structures so that the first and second U-shaped

support structures in combination with the plurality of bars form a skeletal frame, and wherein the first U-shaped support structure is positioned forward of the second U-shaped support structure; and

tow rope attaching means fitted to the upper portion of the skeletal frame for attaching a tow rope thereto.

34. The apparatus according to claim 33 further comprising attaching means for attaching the skeletal frame to the vessel, so as to permit the skeletal frame to be rotated downwardly onto a deck portion of the vessel.

35. The apparatus according to claim 33, wherein the longitudinally extending bars are generally parallel to the floor of the vessel.

36. The apparatus according to claim 33, wherein the tow rope attaching means comprises a tow rope connecting element fixedly attached to the upper extremity of the skeletal frame.

37. The apparatus according to claim 33, further comprising a plurality of anchoring plates for attaching the skeletal frame to the vessel, and wherein each of lower extremities of the U-shaped supports is attached to one of the plurality of anchoring plates.

38. A method for improving aerial characteristics of a performance by a performer using a water sport implement and being towed behind a vessel while maintaining the stability of the vessel, the method comprising the steps of:

providing a vessel behind which the performer is to be towed, the vessel including a bow, a foredeck aft the bow, a stern, opposing sides extending from the bow to the stern, and an operator station positioned amidships between the bow and the stern, aft of the foredeck;

attaching a rigid vertical bridging support structure at attachment points on each side of the vessel adjacent and substantially abeam the operator station, with a generally horizontal bridging portion of the vertical bridging support structure positioned substantially directly above the operator station;

attaching a tow rope to the bridging portion;

imparting sufficient structural strength to the vessel sides, the vertical bridging support structure, the horizontal bridging portion, and the attachment points so as to maintain structural integrity while transferring those rearward forces generated by towing the performer to the vessel sides; and

operating the vessel in a body of water while towing the performer from the horizontal bridging portion.

39. A method for improving aerial characteristics of a performance by a performer using a water sport implement and being towed behind a vessel while maintaining the stability of the vessel, the method comprising the steps of:

providing a vessel behind which the performer is to be towed, the vessel including a bow, a stern and an operator station between opposing sides;

fitting a first relatively rigid vertical support structure to a first one of the sides substantially abeam the operator's station, and fitting a second relatively rigid vertical support structure to a second one of the sides substantially abeam the operator's station, and then extending an elevated, generally horizontal bridge portion between the first and second vertically extending support structures, at a height substantially above the operator station;

attaching a tow rope to the horizontally extending bridging portion; and

operating the vessel in a body of water while towing the performer from the horizontally extending bridging portion.

40. The method according to claim 39, further comprising the step of pivotally attaching the first and second generally vertically extending support structures to the respective sides of the vessel, so as to permit the first and second vertical support structures to be rotated downwardly so that the vessel may pass underneath a bridge or into a boathouse.

41. A vessel and towing tower for permitting a towed performer to achieve improved aerial characteristics while transmitting rearward towing forces amidships to spaced sides of the vessel, comprising:

a vessel having a bow, a stern, opposing sides extending between the bow and the stern, a vessel operator station located amidships between the bow and the stern and a windshield forward of the operator station, a first portion of the windshield extending laterally across the vessel between the opposing sides;

a rigid towing tower including at least four spaced, generally vertically-extending legs, two of the legs comprising a forward leg pair, each leg of the forward leg pair removably attached to a corresponding side of the vessel at an attachment point forward of the laterally-extending first windshield portion, the other two legs comprising a rearward leg pair each of which is removably attached to a corresponding side of the vessel at an attachment point aft of the laterally-extending first windshield portion;

an overhead tow structure fitted with and supported by the forward and rearward leg pairs substantially above the operator station, the overhead tow structure including lateral and longitudinal members forming a rigid overhead frame;

a tow rope receiver fitted to an aft one of the lateral members of the overhead frame; and wherein

the first and second leg pairs, the respective attachment points and the overhead tow structure are imparted with sufficient structural strength so as to maintain structural integrity while transferring rearward forces generated by towing the performer to the vessel's sides.

42. The vessel and towing tower according to claim 41, further comprising:

12

other windshield portions extending along the sides; and wherein

each attachment point for the rearward leg pair is adjacent a corresponding one of the other windshield portions.

43. The vessel and towing tower according to claim 41, further comprising:

each side of the vessel having a generally horizontal deck portion forward of the laterally-extending windshield portion; and wherein

each attachment point of the forward leg pair is positioned on the horizontal deck portion of the corresponding side.

44. The vessel and towing tower according to claim 41, wherein each leg of the forward leg pair is angled upwardly and rearwardly toward the stern sufficiently to extend vertically over the operator station.

45. The vessel and towing tower according to claim 41, further comprising at least one support member extending between each leg of the forward leg pair rearwardly to a leg of the rearward leg pair which is attached to the same side of the vessel.

46. The vessel and towing tower according to claim 45, wherein the support member extends rearwardly in a plane generally parallel with the plane of the corresponding side.

47. The vessel and towing tower according to claim 46, further comprising plural rearwardly-extending support members between each leg of the forward leg pair and a corresponding leg of the second leg pair and lying in the plane generally parallel with the corresponding side.

48. The vessel and towing tower according to claim 41, wherein one leg pair and one of the lateral members of the overhead tow structure are formed together as a generally U-shaped support member.

49. The vessel and towing tower according to claim 48, wherein the first leg pair and a first one of the lateral members of the overhead tow structure together form a first generally U-shaped support structure, and wherein the rearward leg pair and a second one of the lateral members of the overhead tow structure together form a second generally U-shaped support structure.

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13